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(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2018/0197273 A1**  
(43) **Pub. Date:** **Jul. 12, 2018**(54) **SYSTEM AND METHOD FOR DISPLAYING  
GRAPHICAL EFFECTS BASED ON  
DETERMINED FACIAL POSITIONS**(52) **U.S. Cl.**  
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(2017.01); *G06T 11/60* (2013.01)(71) Applicant: **Perfect Corp.**, New Taipei City (TW)(57) **ABSTRACT**(72) Inventors: **Hao-Ping Hung**, New Taipei City  
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An electronic device and associated method place a sticker near a facial region in a digital image. The method detects 2D positions of facial features from a 2D digital image, and calculates a projection matrix from a predetermined 3D reference model having predefined facial feature points that correspond to the 2D detected facial features. The method then selects a digital sticker, and for each corner of the selected digital sticker, uses the projection matrix to transform 3D positions of the corner to corresponding positions on the 2D digital image. The method calculates a refinement matrix defining a correlation of each corner of the selected digital sticker to anchor points in the 2D digital image. Using the refinement matrix, the method calculates updated projected 2D positions and displays the selected sticker on the 2D digital image based on the updated projected 2D positions for each corner point.

